fever may become progressive and only manifest symptoms some years later.

In 1891 I saw in consultation a male nurse who had passed through a comparatively mild attack of enteric fever. The afternoon during his convalescence, while walking in the garden, the patient suddenly fell to the ground in an unconscious condition, and it was only after repeated injections of strychnia and the maintenance of artificial respiration continuously for more than three hours that he roused. During the attack the heart action and respirations were very feeble, but prior to this time his pulse had been good, and trouble was not anticipated. Forty-eight hours later the pulse and respirations were apparently normal. There was a second attack two weeks after the first, which was not so severe, but after this the patient progressed favorably, and at the end of three months went home to his friends in the eastern states, apparently in good health.

There was considerable discussion among the different physicians who saw this patient as to the pathology of the case, most of them being inclined to the opinion that it was one of fatty heart consequent upon the fever; but the apoplectiform character of the seizure, its long duration, the good quality of the pulse, both before and soon after the attack, have always made me suspect that we were dealing with an embolism of one of the smaller branches of the coronary artery derived from a thrombotic deposit upon the roughened lining of the vessel. Osler's emphatic statement that "sudden death not infrequently follows the block of one of the branches of the coronary artery, etc., etc., and this condition may constitute the sole lesion except a slight arterio-sclerosis," is a warning that should always be borne in mind.

But it may be that the symptoms of cardiac disturbance do not become apparent until some years after the patient has suffered from enteric fever. In 1896 I saw a man who was suffering from his first attack of angina pectoris, and there was not anything in his habits or history that could account for the disease except a severe attack of typhoid fever in the year 1890. I know personally that until that time his heart was perfectly sound, but afterward he never regained his former vigor. Subsequently he developed a slight dilatation of the heart with muscular mitral incompetence, and died three years later. No autopsy was obtained. This case is mentioned, not with the intention of demonstrating the relationship between typhoid fever and late cardiac disturbance, but rather with the view of illustrating the observations made by Landowzy, Siredy, Laconbe and others, and which recently have received such support from the statistics collected by Thayer. More gentlemen as a result of careful observations believe that typhoid fever plays an important part in the etiology of arterio-sclerosis; indeed, they believe that it ranks next to acute articular rheumatism. I do not think that the discussion of this topic can be closed more fitly than by quoting the conclusion of Laconbe: "The disorders of the heart appearing some years after recovery from typhoid fever may be legitimately ascribed to this disease, if no other malady capable of comprising the integrity of the heart, either before or after the typhoid, has occurred."

The object of these two lectures has been to emphasize some features of myocarditis that very frequently appear to receive too little consideration; especially is this the case in the first three groups of cases discussed where an increased knowledge of the errors of metabolism will doubtless enable us to retard if we cannot remove the degenerative process. The researchers of the physiological and clinical laboratories promise to put our treatment upon a broader basis, so that in treating cardiac cases the patient will not so often be regarded as if he were only a heart, the patient with Bright's disease as if he were a large kidney, and he will be recognized as a man, an aggregation of organs so interdependent that no one can be affected without influencing another, it may be even to such an extent that the secondary symptoms outclass both in prominence and gravity those of the original lesion.

CHRONIC OTORRHEA AS VIEWED BY THE LIFE INSURANCE COMPANIES AND THE MEDICAL RECRUITING OFFICER.*

By A. BARKAN, M. D., San Francisco.

Motto: "As long as a discharge from the ear exists, we are never able to say how, when or where it may end, nor to what it may lead."—Wilde.

THE RUNNING ear, having been considered harmless, nay a benefit to the general economy of the body, by many from time immemorial, has ceased to be a *noli me tangere*. The last twenty years have brought about a change so radical in the understanding of this malady that radical operative measures have been adopted to fight it. While there is a consensus of opinion as to the indications of thoroughgoing curative methods—nearly all surgical in nature—in many cases of acute and chronic purulent involvment of the temporal bone, the battle still wages with regard to those cases where persons have gone on with ears dry at times, as the patient thinks, slightly discharging at others, with good drainage through a largely perforated drum, with little or no odor to the discharge, no pain or dizziness, and a fair amount of hearing—in a word, then, with a periodically and "comfortably" running ear. Such conditions might be found in the head of a surgeon who does not look with favor upon running sores near any other cavity of the body, in the temporal bone of the monarch, "whose head uneasy lies," with the fear of possible otitic brain complications, or in the ear of a street urchin exposed to all sorts of weather and health conditions.

The profession is divided in rating the seriousness of such conditions. In a discussion on this topic in our local society of eye and ear surgeons a suggestion that some light might be obtained from the rate and death table of life insurance companies led to some personal interviews, and to looking up the topic in literature, principally from this point of view, and as the matter is of some interest also to the general practitioner, I presume to give you the results of my somewhat hurried and fragmentary investigations:

The medical officers of three of the most prominent life insurance companies were interviewed. I elicited from the first and second the following:

"Simple purulent otorrhea, if intermittent and trivial only, is not regarded; but if considerable, or even when slight, if persistent, it imposes an addition to the premium rate equal to one-half per cent of the amount of the insurance. Persistent otorrhea, where the secretion is greenish in color, or offensive in odor, or where there is a history of the occasional discharge of blood, gritty matter or of spiculæ of bone, disqualifies during continuance, and ordinarily for a minimum term of one year after apparent final disappearance. In all cases of otorrhea, therefore, the examiner should make the necessary investigation to cover the foregoing points, and should recite the result in his report."

These are instructions taken from Keating's Handbook. From the third life insurance company I elicited that "chronic otorrhea, when existing, or until two years after it has finally ceased, and proper explanation has been made by the examiner, absolutely excludes." This rule was amended later on as follows: "Cases with otorrhea may be accepted if the disease is unilateral, and a competent aurist furnishes a certificate stating that the perforation is in the lower part of the membrana tympani, and that there is absence of granulations, polypi, caries or involvment of the mastoid cells." Dr. Taylor of the New York Life Insurance Company kindly handed me the February number of the *Medical Examiner and Practitioner*, which had just come into his hands. It contains an article of Dr. Phillips, a New York author-

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ity on middle ear suppuration in relation to life insurance. It allows me to bring before you the results of inquiries made by him on a large scale. To. Dr. Phillips' question, "Do you refuse to accept as risks applicants who have either acute or chronic suppuration of the middle ear?" the answer was that nineteen out of twenty-two companies refused or postponed insurance in every case; three had a substandard class or charged a heavy extra. They required a period of from one to five years to elapse after cessation of suppuration before considering the risk. Twenty-one of twenty-two have no substandard class for applicants of this kind. The companies' action is based not on any definite statistics, but upon a general apprehension that applicants who suffer from otorrhea are more than ordinarily liable to succumb to some of its complications. While one of the underwriters "does not look on all cases with that grave apprehension with which they are viewed by many of his colleagues," another one "does not know anything that is more dangerous than purulent middle ear chronic inflammation." "Although," he says, "a man may live for years and suffer no inconvenience, he is living over a sort of volcano, which may blow its head off and wipe the man out any day. Our rule, therefore, is that while there is any evidence of inflammation we charge a heavy extra, and in case the discharge is purulent or bloody, or gives any indication of involvment of the bone, we prefer not to take them. As this has been our usual plan for forty years or more, of course we have no statistics that would bear upon the subject at all, as we have not been able to follow cases up, but have rejected the same." Another opinion given is: "We consider the risk, if the applicant presents the certificate of a competent aurist that he has entirely recovered, or if at least three years have elapsed after the cessation of such suppuration." This fairly represents the question from the standpoint of underwriters. Allow me to cite now a few medical authorities:

Sir William Dalby, a wise and conservative advisor, the Nestor of British otologists, says: "There will be other cases in whom can be detected an exposed surface of dead or carious bone within the tympanic cavity; with such it has been my habit to advise that their lives should not be taken by life insurance companies. Indeed, at the present time it is probable that no life insurance company would accept a life which was complicated with otitis media suppurativa, *even if no dead or diseased bone could be demonstrated,* or if they do so, they exact a much higher premium."

Macewen remarks: "We cannot too often recall the warning that the virulence of an otorrhea cannot be measured by the quantity of the secretion, its odor or the slightness of its initial symptoms, and that the pyogenic process may proceed insidiously until some accidental circumstance precipitates a dangerous or fatal crisis." In another place he states: "The virulence of a discharge cannot be measured by its odor. Nearly odorless otorrhea may contain pathogenic micrococci, and some of the most serious intracranial inflammatory lesions ensue in the presence of an odorless otitis media." Again: "One who has a chronic purulent otitis media is liable to have, with very little warning, a most serious, or even a fatal, illness." But there is a passage in Macewen's book on "Pyogenic Diseases of the Brain and Spinal Cord" which more than any other applies to the cases which we touch upon in this paper, when, having exhausted all medical treatment, the ear is still slightly running, and we are sorely tried to decide whether to operate on the ear or trust to the *vis medicatrix naturæ*. Let us heed the words of him who, oftener than any other surgeon living, has successfully followed the pyogenic path of disease from the ear into the brain. They are: "The extent of disease cannot be measured by the amount of purulent discharge issuing from the external meatus, as very extensive disintegration may proceed in the middle ear and its recesses by a process closely resembling 'caries sicca,' though there is generally a slight aural discharge and an oozing of muco-purulent matter."

Professor Ballance of St. Thomas Hospital, London, has the following apt illustration of our topic: "No surgeon would advise that operative treatment for the cure of caries of the sternum should be deferred until the pericardium has become infected, or the patient has commenced to develop the symptoms of general infection. Nor would any surgeon postpone the operative measures necessary to heal a cavity in the head of the tibia until the abscess had made its way into the knee joint. These remarks apply to the necessity of radical operative interference in chronic, not in acute, cases of otorrhea."

Troeltsch, one of the founders of scientific otology, in his masterly treatise on ear affections common to children, many years ago said: "All these inflammatory, embolic and septic processes, which as sequelæ of chronic purulent otorrhea so frequently cause death, may come about without any caries being present. The purulent inflammation of the soft parts of the ear alone are sufficient for the development of these conditions." The weight of this opinion cannot, I take it, be diminished by Brieger's statement that there are certain purulent inflammations of the mucous membrane lining the drum cavity which may be considered almost absolutely free from danger, which hardly ever lead to endocranial complications; and when the mucous discharge, threadlike in form, contains the pyogenic bacteria in remarkably scanty numbers, I cannot understand these cases, a sort of harmless blenorrhea of the middle ear, which Brieger refers to; and his statement as to freedom from complications in these seems to me quite hedged in. Pollitzer excludes all cases of otorrhea which show granulations or polypi in the ear, desquamative processes in the middle ear, caries, and paresis of the facial nerve, and adds that "a conditional acceptance, i. e., with increased premium, may be permitted in the case of those in whom, in consequence of a former supuration of the middle ear, a persistent (dry) perforation remains in the membrane, as in these cases suppuration returns more easily than when the opening is closed by cicatrization."

Howell, a prominent English author, likewise "considers a remaining perforation, even with no discharge visible, with caution, on account of the danger of recurrence, especially if affections of the nose and throat be present." And again: "After unsatisfactory results of treatment, the application must be rejected, or accepted only with considerable addition of the premium. The duration of life in such persons is below the average. Some, indeed, die at a comparatively early age, either from the direct consequences of the local affection or from some wasting disease. (A point well taken.) It must be borne in mind that many years may elapse between the first appearance of a discharge from the ear and its fatal consequences in the brain."

Even in comparatively simple cases severe intracranial complications may suddenly supervene. As a general rule, the longer the disease has lasted the greater is the risk of bone complications, and hence the greater the risk of septic absorption. Fifty per cent of all brain abscesses are probably due to otitic disease, and 5 per cent of all cases of meningitis and two-thirds of all cases of sinum phlebitis are due to otorrhea. In round numbers, it may be said that one in one hundred fifty hospital deaths is due to otitic lesions. These few data out of a mass of statistics, together with the opinions of weighty medical authorities, must suffice to prove that suppurative diseases of the middle ear cannot be too lightly considered by life insurance companies. More and more the opinion of aural experts is asked for. The insurance companies will do well to introduce such a safe-

guard as a routine measure in their examinations of applicants for life insurance, for the difficulties in ascertaining the pathological conditions of the temporal bone, with its many recesses, are often very great, owing to the fact that its cavities are hidden from view; that a delicate examination with probes, with guidance of light, has to be resorted to, and that histological examination of granulation tissue, chemical examination of sediments in the discharge, and bacteriological examination of the same, must be made in order to reach safe conclusions; and even then there are cases—and these are referred to in this paper as "comfortably running ears"—on which a decision must be based on clinical instinct and experience, where, in the face of apparent security of patients in whom no bone disease can be detected, and medical treatment having failed, operative measures, ossiculectomy or radical operation must be resorted to.

Insurance companies should refuse risks, or at any rate advise their clients to have their ears attended to, and then apply again for insurance. Once more I would like to cite Sir William Dalby, for whose wisdom and practical tact I have a great respect. "When should the radical operation be performed?" he asks. Having stated four indications accepted by everyone at this date, he said: "Fifthly—In a certain proportion of patients with intractable otorrhea, in whom no bone disease can be detected, and in whom no history of ominous symptoms can be obtained. It is in the last two classes that the opinions of experts may be expected not to be in agreement, and these are the cases which are so very difficult to determine, and which have been most aptly compared to slight cases of appendicitis in which the question of operation is under discussion."

A few facts seem to stand out fairly well:

First—That the life insurance companies should possess statistics of their own upon which to guide them in their accepting or refusing risks of patients afflicted with otorrhea.

Second—That they consider cases of otorrhea with slight discharge, *if persistent*, as dangerous, even in absence of ascertainable bone disease.

Third—That high medical authorities agree with that apprehension, and warn against looking upon odorless discharges as harmless.

Fourth—That even a dry perforation forms a handicap, inasmuch as such an ear will discharge more easily on slight provocation, especially if trouble is present in the naso-pharynx.

Fifth—That a history or presence of tuberculosis in an individual at once renders the prospect of a case more unfavorable, but should not prevent, if the ear trouble be of a tubercular kind, dealing with it in a thorough surgical way.

Sixth—That while an occasional death, once in a very long while, may occur after a surgical operation performed on the ear for the cure of an apparently slight affection, the great majority of cases of running ears will become dry, and remain so; and even those comparatively few cases in which, after a radical operation or ossiculectomy, complete cessation of discharge is not accomplished, will, as Phillips aptly puts it, and as Macewen very strongly insists, be much better after than before the operation, for the discharge remaining generally is scanty and entirely different in character, without odor, and the drainage is so perfect and free that there should be no danger to life.

Phillips has been unable to find a report of any case of intracranial complications occurring subsequent to complete healing following a radical operation. It behooves us, then, to watch that, even in the apparently safe group of cases of otorrhea spoken of in this paper, the economy of the body should receive no serious injury.

Personally, I think that were we able to examine every crevice and nook of the intricate recesses and the labyrinthian path of the temporal bone, we would, wherever discharge of whatever kind is present, find a focus of bone disease.

With regard to the stand which recruiting medical officers take in cases of ear imperfection, I have met with but scanty information. In our own country, according to Greenleaf, who is a guide to the medical department, the discharge of matter from the ear is generally an evidence of a diseased condition of the parts within, which is very likely to lead to permanent deafness, and is therefore a cause for rejection. In seems, then, that deafness, according to the military authorities, and not the discharging ear, with its possible complications, disqualifies a recruit from entering the service. Colonel Girard of the military service here, was kind enough, also, to tell me that a deficient drumhead and a lack of patency in the eustachian tube excludes recruits from artillery service.

Barr, a good Scotch author, asks the question: "Are sufferers from chronic discharge from the ear fit for military service? When there is considerable tendency to acute inflammatory attacks, in the case, which would incapacitate a soldier for duty, the fluctuating condition of the hearing, and the possibly serious consequences to life itself, it would appear proper, in the interest of both the individual and of military efficiency, to exclude persons suffering from this disease from such a life of exposure as that of a soldier in the field."

In the German army men suffering from discharging ears of any kind, with a measurable disturbance of hearing, are excluded from service, if treatment has proven unavailing; and even those who enter service after their middle ear disease has been cured and there is a scar in the drumhead, are carefully watched, and do not take part in the swimming instructions.

THE SURGICAL TREATMENT OF CHRONIC NEPHRITIS.*

By J. HENRY BARBAT, M. D., San Francisco.

SINCE Edebohls published his first paper on the surgical cure of chronic nephritis there have appeared a large number of articles bearing on the subject, proving that any and all diseases of the kidneys are amenable to surgical treatment. No attempt has been made at classification, and I find it a hopeless task to determine in most cases whether the patient was suffering from true chronic nephritis or merely from backache. That there is some virtue in surgical interference for the relief of renal disease we cannot deny; but, like all new procedures, it has been used promiscuously, without, in many cases, first making a diagnosis of kidney disease. Undeserved credit has been given the operation which often properly belonged to rest in bed, diet and hygiene, which are known to influence chronic nephritis beneficially.

While the disease has sometimes been found to be focal in character, we cannot accept the statement that only one kidney is involved in about 50 per cent of patients operated upon, because in a long list of autopsies on those who had died of nephritis, it was noted that the disease was bilateral in all cases, and only occasionally was one kidney more affected than the other. If we accept Ferguson's dictum that all cases of floating and tender kidneys are interstitial nephritis, then we can easily conceive of unilateral disease, because we seldom find both kidneys movable and tender.

I have had but one patient in whom I decapsulated the right kidney for chronic diffuse nephritis of ten months' standing. The urine before the operation

*Read before the San Francisco County Medical Society.